Improving Turning Compliance and Reducing Pressure Injuries in the Acutely ill Patient

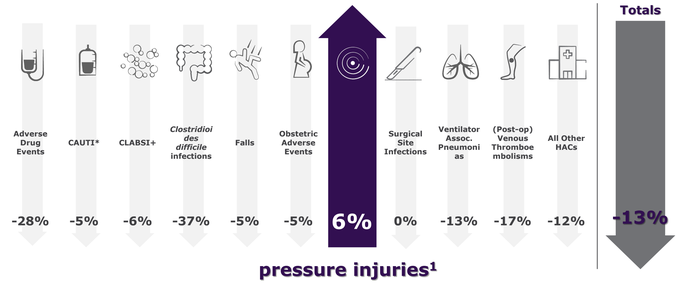
Nancy Carr BSN, RN, CWOCN and Katelyn Lawler BSN, RN, CWOCN
Inpatient Wound Care, Einstein Medical Center Montgomery

BACKGROUND AND SIGNIFICANCE

AHRQ continues to report that hospital-acquired pressure injuries (HAPI) are on the rise nationwide while all other hospital-acquired conditions have decreased.[1]

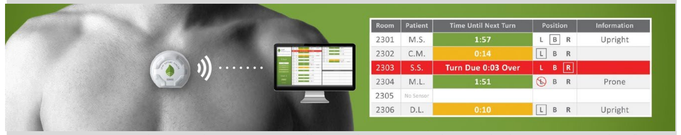
The unreimbursed treatment cost of each HAPI is estimated at $21,784 and the treatment cost of ICU-acquired HAPI is even higher at over $32,000.[2] In addition, patients with HAPIs are 2 to 5 times more likely to experience a fall, a urinary tract infection, venous thrombosis and ventilator-acquired pneumonia.[2] The high cost and increased risk for other HAC make HAPI prevention a priority.

Regular patient turning has been shown to have a strong correlation to reduction in HAPIs.[4]



METHODS

Patient wearable sensor system was implemented in the ICU, 3 East & West and 4 East & West.



The system provides visual cues in red, yellow and green to indicate which patients are due for a turn. In addition to on-time turning, the system also monitors turn angle for adequate turning and tissue recovery time between turns.

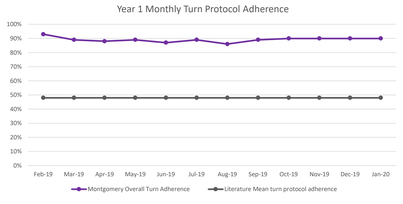
Staff received hands-on education on how to safely and adequately reposition patients. HAPI incidence before and after intervention were measured and compared for statistical significance.

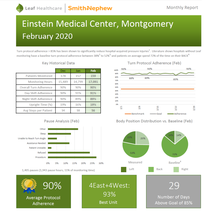
Using wearable technology to cue patient repositioning was cost effective and significantly reduced HAPI incidence.

High adherence to turn protocols is sustainable long term.

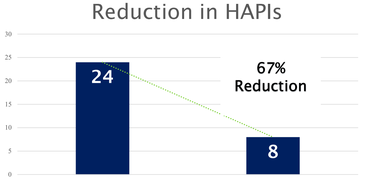
RESULTS

In the first 12 months, 918 patients qualified for the sensor (Braden Scale ≤16) and were monitored 112,998 patient care hours. Most common reasons for delayed repositioning were procedures and patient/family refusal.





Mean turn protocol adherence was 90%: 89% for Day and 90% for Night shift. The result exceeds turn adherence documented in literature by almost 2x.[5]
Daily and Monthly Reports with unit and shift-level repositioning data helped sustain a high level of adherence.



Return on Investment	
Number of HAPIs saved	16
Cost per non-ICU HAPI (AHRQ)	$21,784
Cost per ICU-acquired HAPI	$32,000
Total cost/harm avoidance	$368,976
# patients monitored	918
Cost of patient sensors	$183,600
Est. Return on Investment	$185,376

Number of HAPIs were reduced by 67% in the first 12 months. Estimated ROI on the program for the first year was over $185,000 Dollars. 92% of nursing staff felt that the sensor program improved their unit communication.

Out of the 8 patients with HAPIs in the intervention period, only 1 was monitored with a sensor. 5 HAPI patients met the monitoring criteria but were not provided a sensor.

Program next step is to develop a process by which monitoring is initiated on qualifying patients on a timely basis.

REFERENCES

1. AHRQ National Scorecard on Hospital-Acquired Conditions Updated Baseline Rates and Preliminary Results 2014-2017
2. Wassel C et al. Readmissions, mortality, cost, and clinical outcomes of hospital acquired pressure injury patients by stage. Poster presented at SAWC Fall 2019 Conference; Las Vegas, NV, USA. Oct 12-15, 2019.
3. European Pressure Ulcer Advisory Panel, National Pressure Injury Advisory Panel and Pan Pacific Pressure Injury Alliance. Prevention and Treatment of Pressure Ulcers/Injuries: Clinical Practice Guideline. Emily Haesler (Ed.). EPUAP/NPIAP/PPPIA: 2019
4. Bergquist-Beringer, S., Dong L., He J., Dunton N. Pressure Ulcers and Prevention among Acute Care Hospitals in the United States. The Joint Commission Journal on Quality and Patient Safety 2013; Vol 39, No 9. 404-414.
5. Pickham D, Pihulic M, Valdez N, Mayer B, Duhon P, Larson B. Pressure Injury Prevention Practices in the Intensive Care Unit: Real-world Data Captured by a Wearable Patient Sensor. Wounds. 2018 Aug;30(8):229-234

LFCE2-27476-0920